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TRICHINÆ IN MEAT.

A short time ago the public was greatly excited over the introduction into France of trichinated meat. It is remembered that the first case of trichina was noticed at Lyons on provisions exported from America. As regards the importance of this question, it is sufficient to state that, according to official documents, the importations of salt pork and of lard amounted in 1880 to 46,164,000 kilogrammes, of which 37,102,000 kilos. came from the United States. The prefecture of police ordered the inspectors of slaughter houses to examine all the incoming specimens of salt and smoked pork in the different stations and especially that of Batignolles. This station received indeed all the envoys of Havre, where four-fifths of American imports are disembarked. Unfortunately there was a great disproportion between the service of inspection and the continually increasing extent of the provisions. The result was an encumbering of provisions suspected of being contaminated at the points where the inspection took place. A certain number of merchants, moreover, desirous of entering into the possession of their merchandise, so as not to retard its delivery, have sought to evade inspection, and in order to obtain this end took advantage of the small number of inspectors, who, being grouped at certain points, thus allowed certain entries to be free from all verification; they have accordingly introduced their merchandise at these points.

The administration should put an end to this invasion. The Secretary-general of the police departments, anxious for the public health and its interests has, in concert with the Prefect of police, taken opportune measures and charged the municipal Laboratory to investigate the trichinated provisions that have passed the ports. The officers of the Laboratory, accompanied by a commissary of police, proceeded to those accused of introducing un-inspected provisions. Microscopic examination has in several cases shown the presence of trichinæ. We have, therefore, thought it useful to demonstrate the procedure, very simple, which is pursued in the investigation of this infection.

A specimen is taken from the muscular portion, and as much as possible in the vicinity of the bone or tendons, which is very easily accomplished by means of the instrument represented in figure 1. A small fragment of meat is

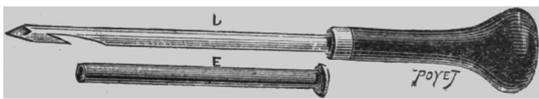


FIG. 1.—INSTRUMENT FOR EXTRACTING SPECIMENS OF MEAT, AND ITS SHEATH.

cut with a scissors from the fibres, and stretched on a plate of glass. A drop of diluted alcohol is added or some potassa, and the preparation is levelled by covering it with a lamina of glass (fig. 2); then placed on the stage of the microscope. A magnification of 70 diameters is sufficient for seeing the trichina quite distinctly. It is preferable, nevertheless, in order to work more rapidly and to distinguish the trichinæ of the striated muscular fibres, to magnify it 140 diameters.

Fig. 3 represents one of these preparations seen under the microscope; two trichinæ are enclosed in their cyst and the third has free movement over the muscular tissue.

The parasites that are met with on the trichinated meats of America are not dead, as is proved by the following experiments. A cut is made in the trichinated meat; distilled water is used instead of alcohol, and we begin our search for a free trichina. The preparation is then placed upon Ranvier's hot platinum, and the temperature is raised to 40° C. At the end of a certain time, displacements of the trichina will be observed. These movements become stronger from 42° C. to 45° C, and at 50° C. the animal dies.

The municipal laboratory, in employing this very simple mode of investigation has, as we have mentioned, been able to detect contaminated provisions in Paris, and has caused their seizure.

Moreover, as soon as the invasion was known, the necessary precautions were announced to the public, and all the journals have reproduced the circular of the minister.

Trichinated meat, which has been sufficiently cooked in order that the central portions attain at the least a temperature of 60° C., can be eaten without danger; for this purpose, each kilogramme of meat should be cooked about an hour.

The municipal Laboratory adds that it would be advantageous to add vinegar during the cooking.

Such are the means taken at first by the administration to oppose the importation of trichinated provisions.

It remains still to give a decision in regard to provisions stopped at the port as suspected. The inspectors being few in number, rejected a whole chest as soon as they discovered a trichina. It was hardly possible to do otherwise, unless a veritable army of microscopists was at hand, as is done for instance, in Germany, or the pork shop keepers be responsible for the sale of trichinated pork—a procedure which would set 18,000 microscopes in pursuit of the infection.

M. Pasteur, who was consulted upon the question, whether all the provisions of a chest should be seized, if only a single trichinated fragment had been encountered, replied in the affirmative, basing his decision upon the following reasons:

"It is not because I believe in a direct contamination caused by the wanderings of trichinæ from one piece to another, but, in addition to the fact that this contamination can be made through the falling of trichinated *débris* upon those which are not, the separation becomes illusory through the difficulty of effecting it. Finally, a trichinated piece may appear healthy, even after a careful examination."

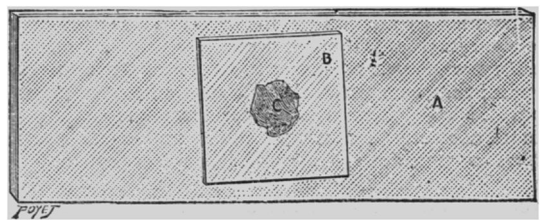


FIG. 2.—TRICHINOUS MEAT PREPARED FOR MICROSCOPICAL EXAMINATION. A. GLASS SLIDE. B. THIN GLASS COVER. C. PORTION OF TRICHINOUS MEAT.

The "*Concile de l'Hygiène et de la Salubrité*" attached to the prefecture of police has noticed the impossibility of examining under the microscope all the salted provisions exported from America. As but a small quantity chosen from each cask can be examined, the Council has formed the opinion that the only efficacious means of saving the public health should be to prohibit absolutely the importation of American salted provisions into France. And to prevent the consumption of trichinated meats already introduced, the Council, adopting the view of M. Pasteur, has expressed the opinion that the administration should destroy all the contents of casks enclosing several pieces that are known to be infected with trichina.

In this state of affairs, we believe that immediate prohibition would be the best course for the government to follow. We will recall, besides the fact that Spain, Portugal, Greece, etc., have prohibited American provisions; that Italy has prohibited all imports of pork; that Germany has interdicted the entrance of any minced pork meat coming from America, and finally that Hungary has taken like measures.

It has been objected that a prohibition would deprive the working class of a large quantity of cheap meat; another objection is the hinderance to commerce. These reasons do not appear valid to us, if there be real danger for the public health, and if there be, as we have said, and as the experiments of M. Chatin show still, living trichinæ in American hams. The danger resides especially in the use of strings preserved in brine, which enter into the composition of pig's cheese and of sausages and hashes of all kinds, such as the pork-seller delivers them, that is to say, always imperfectly cocked.

It is possible that a person may partake of trichinated meat, before its contamination has been noticed, and if a case of trichinosis be not remarked, it is only because the diagnostic of the disease is but little known, and has no positive character. Waiting until the labors of German physicians, which are but little spread in France, enlighten us on the symptoms of this affection, we deem it useful to examine under the microscope the faeces of those suffering from typhoid fever, in order to find out whether, under the cover of this malady, there is not, as often happens, a case in point of trichinæ eliminating themselves in part by this way.—*La Nature*.

TRICHINOSIS.

DR. E. C. WENDT presented to the New York Pathological Society, April 13th, specimens illustrating Trichinosis. The slides under the microscope showed muscular trichinæ in a free state. They exhibited different degrees of parasitic development, although they were all taken from the same woman. The infested muscles were obtained from a recent fatal case of the disease

which had occurred in Hoboken. For the history of the case he was indebted to Dr. W. T. Kudlich of that city. The whole course of the malady, from the initial enteric symptoms through a typhoid stage with intense muscular pains to the lethal termination, was so typical that the detailed clinical account of this case might be omitted. It should be stated, however, that shortly after the young robust wife fell ill, the husband also took to his bed with well-marked symptoms of trichinosis. In view of the present agitation of the public mind over the wholesale prohibition of American pork by the Continental powers, it might be of interest to remember that in the present instance the disease was unmistakably traced to a home product. The living parasites were used for

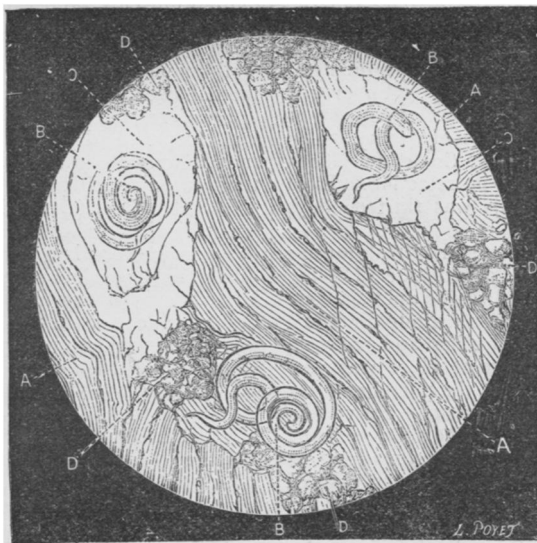


FIG. 3.—PORTION OF TRICHINOUS MEAT AS SEEN UNDER THE MICROSCOPE, MAGNIFIED 140 DIAMETERS. A. A. A. MUSCULAR FIBRES—B. B. ENCYSTED TRICHINÆ. C. C. CYSTE. D. D. D. FAT GLOBULES.

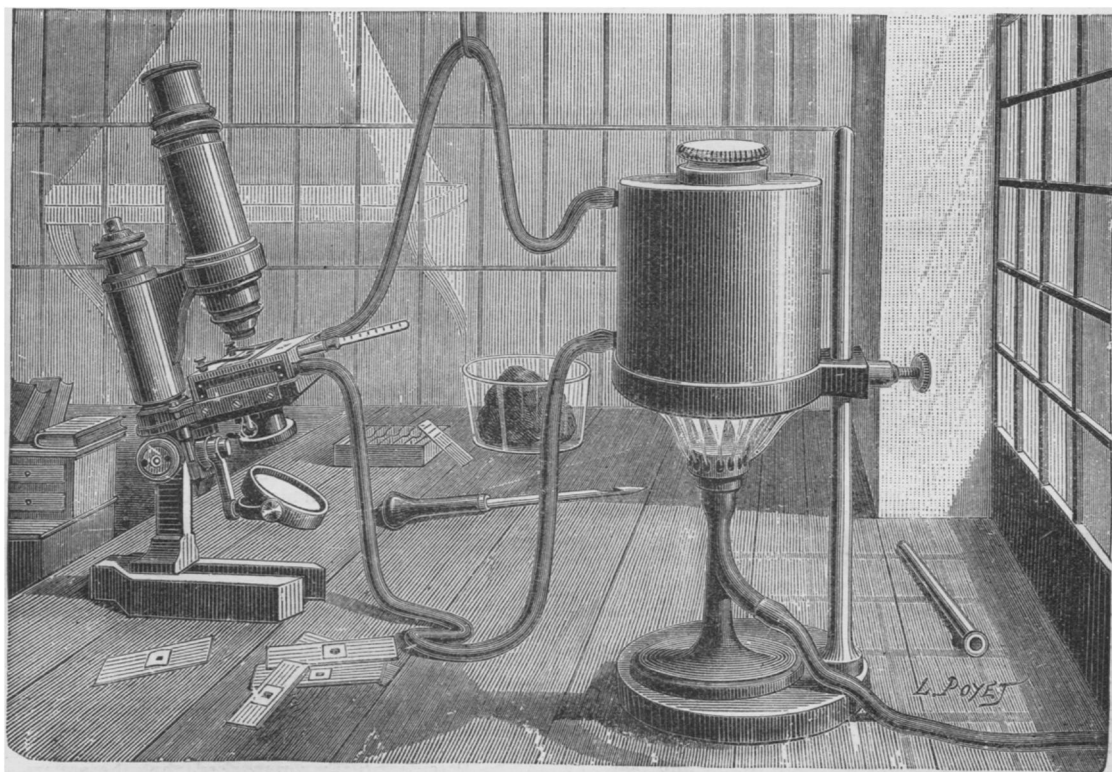


FIG. 4.—MICROSCOPE PLACED IN POSITION FOR THE EXAMINATION OF TRICHINOUS MEAT AT A TEMPERATURE OF 40° C. BY MEANS OF THE HEATING APPARATUS OF RANVIER, AS USED BY THE MUNICIPAL CHEMICAL LABORATORY AT PARIS.